

## Preface

Over the past few years the benefits to be gained through the automation of office procedures have received considerable attention. The most significant gains that can be realized from the implementation of these systems arise out of supporting the work of professionals, as opposed to clerical staff. This issue of the *IBM Systems Journal* is dedicated to furthering the goal of improved productivity of professionals by presenting IBM research work directed at that objective.

One of the challenges for authors and editors is the inability to visualize the results of their efforts in final form while working on a document. A system for the composition of documents should support a variety of type styles, full text editing capability, and the manipulation of figures. The paper by Chamberlin *et al.* describes an experimental document composition system named JANUS after the Roman god of two faces. It utilizes a dual display technique to electronically lay out the pages of a document containing a mixture of text and figures. One display shows the final formatted document, while the other provides for the entry and manipulation of text and figures. Facilities to significantly reduce the time and effort involved in preparing a document for publication are provided.

In addition to the basic word processing functions required by professionals, future systems must incorporate the capability for data base inquiry and access. The paper by Zloof describes Office-by-Example, which is an experimental system modeled after the highly successful Query-by-Example. In an easy-to-use, two-dimensional entry format the system allows professionals to maintain and develop applications using data bases, as well as to create, edit, and transmit documents. The system provides the capability for users to tailor and generate their own menus to perform frequently required tasks.

Many of the tasks that were performed by the secretarial staff as a part of their translation of dictation into finished copy must in the future be performed by professionals or the system that supports them. The paper by Heidorn *et al.* describes a computerized aid for document composition. This experimental system serves to guide the author in expressing his ideas, through building proper sentences, to developing a complete document. Included in the system is the capability to critique a document for grammar and style. It is with the aid of such a system that professionals will be given the confidence to utilize their terminals to produce finished copy without secretarial assistance.

Whereas the previous papers, and much of the existing literature, describe facilities to improve task-oriented productivity, little has been done to address the office from a total systems perspective. The paper by Lum, Choy, and Shu describes an experimental system which is designed to automate office procedures. The system utilizes a forms-oriented approach as a natural, consistent, and effective interface between office workers and the data they use. The author describes the overall systems design and provides specific illustrations of its use.

As we have grown in our experience with systems designed for users we have become more cognizant of the issues that can have a significant effect upon their usability, and the productivity to be gained through their implementation. The paper by Bullen, Bennett, and Carlson presents the results of a joint study between IBM and the Massachusetts Institute of Technology that analyzed the use of workstations at the IBM Research Laboratory in San Jose, California. Many useful and creative applications that have been developed at the Research Laboratory are reported in this survey. Work patterns, approaches, and innovations of the secretarial and scientific staff using interactive terminals were its prime focus. The result is the specification of an idealized workstation, which computer scientists and human factors engineers will want to use as a model for future designs.

Although many benefits can be derived from the automation of clerical procedures in the office, it is generally accepted that the most effective systems will be those that focus on the productivity of professionals. The research work described in this issue addresses this potential. Its publication is intended to illustrate ways of improving the productivity of professionals and to stimulate further research toward this goal.

John Lacy  
Editor